

ab cond. predetermined size within an image that has undergone the filter processing, regardless of which filter is selected from the plurality of filters.

REMARKS

Favorable reconsideration of this application, in view of the following comments and as presently amended, is respectfully requested.

Claims 1-21 are pending in this application. Claims 1-21 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent 6,160,576 to Higuchi et al. (herein "Higuchi").

Initially, applicant and applicant's representative wish to thank Examiners Kumar and Saras for the interview granted on April 14, 2003. During that interview the outstanding rejections were discussed in detail. Further, during that interview claim amendments were discussed to clarify the claims over the applied art. The present response sets forth the discussed claim amendments. During the interview the Examiners attentively indicated that such claim amendments appear to overcome the outstanding art to Higuchi. Comments as presented in the interview are also now reiterated below.

The above-noted rejection of Claims 1-21 under 35 U.S.C. § 103(a) as unpatentable over Higuchi is traversed by the present response.

It is initially noted that each of the independent claims is amended by the present response to clarify features recited therein. Specifically, Claim 1 now clarifies that the setting section allows "a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image". The other independent claims are similarly amended.

According to the feature as clarified in the claims, the user of the image display device directly sets an image quality adjustment for a property except contrast and brightness

adjustments. Such a feature even further clarifies the claims over the applied art to Higuchi. More specifically, Higuchi does not disclose or suggest that a user can directly set an image quality adjustment. Instead, Higuchi discloses that a user can merely set his or her age, which will result in different image compensations.² Moreover, Higuchi is directed to a different type of device with a different type of objective than that of the claims as currently written.

The applicant of the present invention has recognized that image processing apparatuses include several types of adjustments to image quality, such as adjusting a sharpness, as a non-limiting example. The applicant of the present invention has also recognized that when sharpness is adjusted other image qualities, such as contrast and brightness of an image, are also affected.³

Accordingly, the applicant of the present invention has devised the claimed invention to reduce the influence that an image quality adjustment makes upon a contrast or brightness of an image.⁴ To achieve the above operation, the claimed image display device of independent Claim 1 allows a user to *directly* set an image quality adjustment that is not a contrast or brightness adjustment of an image. In one non-limiting example, and as recited in dependent Claim 2, that image quality adjustment may be a sharpness adjustment. As noted above, the applicant of the present invention has recognized that an image quality adjustment that excludes contrast and brightness adjustment may adversely affect the contrast or brightness. To address that drawback, independent Claim 1 further requires an image

²Higuchi at column 5, line 55, through column 6, line 6; at that portion, Higuchi discloses utilizing an age dial 14 to set a user's age, resulting in different image compensations.

³See, for example, the present specification at page 1, lines 23-25.

⁴See, for example, the present specification at page 2, lines 2-4.

processing section “to perform contrast compensation *to maintain a brightness* at a center of a specific color region larger than a predetermined size within the image displayed by the display device, regardless of the setting of the image quality adjustment” (emphasis added). That is, according to such a feature as recited in independent Claim 1, a brightness in a specific region is *maintained* even when the image quality adjustment is made. In the specific non-limiting example noted above, when a sharpness adjustment is made, a brightness is maintained at a center of a specific color region that exceeds a predetermined size. Such subject matter is also shown for example in Figures 5(a)-5(d) in the present specification. It is also noted that the other independent Claims 6, 9, 12, 14, and 19 recite similar features as noted above with respect to independent Claim 1.

Such features as recited in the claims even further clearly distinguish over the teaching in Higuchi.

Higuchi is not directed to a device that even recognizes the problems that the present invention recognizes and addresses. In that respect it is noted that it is only the applicant who has recognized the problem discussed above in that certain image quality adjustments adversely affect contrast and brightness. As noted in MPEP § 2141.02 discovering a source/cause of a problem must be considered, which has not been done in the outstanding Office Action.

As noted above, Higuchi is directed to a completely different problem than that of the claimed invention. Higuchi is directed to a device for a navigation system installed in a vehicle that can adjust the display of a map depending on an age of an observer.⁵ To meet that objective, Higuchi discloses that different color compensation values can be utilized based on a set age.

⁵Higuchi at column 5, lines 7-9.

In such ways, Higuchi clearly does not even recognize, much less address, the same problem as noted above that the present invention recognizes and solves.

It is further noted that Higuchi does not disclose or suggest performing any contrast compensation “to *maintain a brightness* of a center of a specific color region larger than a predetermined size within the image displayed by the image display device, regardless of the setting of the image quality adjustment” (emphasis added). That is, in the claims, a brightness is *maintained* at a same level regardless of a setting of the image quality adjustment. Higuchi does not teach or suggest any such subject matter. Higuchi discloses performing different color compensations, but Higuchi does not disclose performing those color compensations to *maintain* a brightness level.

Further, in maintaining the outstanding rejection, the outstanding Office Action appears to take the position that the disclosure in Higuchi is similar to that disclosed in the specification at page 10, line 25, through page 11, line 2.⁶

In that respect, it is believed that the outstanding Office Action is misconstruing the teachings of Higuchi relative to the claims as currently written. As noted above in detail, Higuchi is directed to a device that allows an age setting to be made and to allow different compensations to an image to be made based on the set age. The claims as currently written are not directed to such a device, but instead are directed to a device that can maintain a brightness at a center of a specific color region regardless of a setting of image quality adjustment. Higuchi simply fails to teach or suggest any such subject matter.

It is also noted with respect to the noted teachings in Higuchi at column 5, lines 8-54, column 5, line 63, to column 6, line 6, Higuchi does not disclose or suggest maintaining a brightness in an image. It is respectfully requested that the outstanding Office Action

⁶Office Action of December 18, 2002, page 5, second paragraph.

specifically indicate which portion in Higuchi discloses maintaining a brightness as a noted portion in Higuchi does not even disclose the word "brightness". The above-noted portion in Higuchi is directed to color compensation but, again, does not even address any maintenance of a brightness.

In view of the foregoing comments, it is respectfully submitted that clearly each of the pending claims distinguishes over the teachings in Higuchi.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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Amendment Filed Herewith

IN THE CLAIMS

--1. (Amended) An image display apparatus, comprising:

an image display device configured to display an image;

a setting section configured to allow a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image; and

an image processing section configured to perform the image quality adjustment of the image according to the setting made by the user, and to perform contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within the image displayed by the image display device, regardless of the setting of the image quality adjustment.

6. (Amended) An image processing device, comprising:

an image filter configured to perform filter processing of an image by using a selected one of a plurality of filters with different frequency characteristics, the selected filter being selected based on a user directly setting image quality adjustment excluding contrast and brightness adjustment of the image; and

a contrast compensation section configured to perform contrast compensation using a contrast compensation value, related to the selected filter, to maintain a brightness at a center of a specific color region larger than a predetermined size within an image that has undergone the filter processing, regardless of which filter is selected from the plurality of filters.

9. (Amended) An image display apparatus, comprising:

means for displaying an image;

means for allowing a user to directly set image quality adjustment excluding contrast and brightness adjustments of the image; and

means for performing the image quality adjustment of the image according to the setting made by the user, and for performing contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within the image displayed, regardless of the setting of the image quality adjustment.

12. (Amended) An image processing device, comprising:

means for performing filter processing of an image by using a selected one of a plurality of filter means with different frequency characteristics, the selected filter means being selected based on a user directly setting image quality adjustment excluding contrast and brightness adjustment of the image; and

contrast compensation means for performing contrast compensation using a contrast compensation value, related to the selected filter means, to maintain a brightness at a center of a specific color region larger than a predetermined size within an image that has undergone the filter processing, regardless of which filter means is selected from the plurality of filter means.

14. (Amended) A method of displaying an image on an image display device, comprising the steps of:

(a) directly setting a set value for image quality adjustment excluding contrast and brightness adjustments of the image; and

(b) performing the image quality adjustment on the image according to the setting, and performing contrast compensation to maintain a brightness at a center of a specific color region larger than a predetermined size within an image displayed by the image display device, regardless of the setting of the image quality adjustment.

19. (Amended) A method of processing image, comprising the steps of:

(a) performing filter processing of an image by using a selected one of a plurality of filters with different frequency characteristic, the selected filter being selected based on a user directly setting image quality adjustment excluding contrast and brightness adjustment of the image; and

(b) performing contrast compensation using a contrast compensation value, related to the selected filter, to maintain a brightness at a center of a specific color region larger than a predetermined size within an image that has undergone the filter processing, regardless of which filter is selected from the plurality of filters.--